

In the Claims

1. (Previously presented) A CT detector comprising:
a scintillator module including at least one scintillator configured to be impinged with radiographic energy from a radiographic energy source;
at least one indexing pin connected to the scintillator module; and
a collimator assembly having a plurality of collimator elements and a plurality of teeth configured to define a relative position of the plurality of collimator elements and a portion thereof configured to engage the at least one indexing pin, and wherein at least two of the plurality of teeth are constructed to flank an indexing pin.
2. (Original) The CT detector of claim 1 wherein the at least one scintillator includes a plurality of scintillators uniformly arranged in a scintillator array.
- 3-5. (Canceled)
6. (Original) The CT detector of claim 1 further comprising at least one photodiode configured to detect illumination of the at least one scintillator.
7. (Original) The CT detector of claim 1 incorporated into a rotatable gantry of a CT imaging system.
8. (Previously Presented) A scintillator-collimator combination comprising:
a plurality of collimator elements configured to collimate x-rays projected thereat;
a scintillator module having a scintillator pack formed of a material configured to illuminate upon reception of x-rays; and
a comb having a plurality of teeth constructed to align the plurality of collimator elements and constructed to engage the scintillator module and align the scintillator module relative to the plurality of collimator elements.

9. (Previously Presented) The scintillator-collimator combination of claim 8 wherein the scintillator module further comprises a locating pin constructed to snugly engage a recess of the comb, wherein the recess is defined between two of the plurality of teeth.

10. (Original) The scintillator-collimator combination of claim 9 wherein the locating pin is configured to align the scintillator pack with respect to the plurality of collimator elements such that the scintillator module does not overlap two collimator elements spaced apart from one another a distance equal to a width of the scintillator module.

11. (Canceled)

12. (Original) The scintillator-collimator combination of claim 8 configured to be optically coupled to a photodiode array and configured to detect illumination from the scintillator pack and output electrical signals responsive thereto.

13. (Original) The scintillator-collimator combination of claim 8 incorporated into a CT imaging system designed to acquire diagnostic data of a medical patient.

14. (Original) A CT system comprising:
a rotatable gantry having a bore centrally disposed therein;
a table movable fore and aft through the bore and configured to position a subject for CT data acquisition;

a high frequency electromagnetic energy projection source positioned within the rotatable gantry and configured to project high frequency electromagnetic energy toward the subject; and

a detector array disposed within the rotatable gantry and configured to detect high frequency electromagnetic energy projected by the projection source and impinged by the subject, the detector array including:

a plurality of scintillator modules, each having a scintillator array and an indexing pin;

a collimator assembly having a plurality of collimator plates; and

a detector support having at least one comb of alignment teeth, the alignment teeth constructed to align the plurality of collimator plates, and constructed to engage an indexing pin to align a scintillator array with the plurality of collimator plates.

15. (Canceled)

16. (Previously Presented) The CT system of claim 14 wherein the alignment teeth define a uniform spacing between collimator plates of the plurality of collimator plates.

17-18. (Canceled)

19. (Previously Presented) The CT system of claim 14 wherein the indexing pin laterally extends beyond an end of a respective scintillator array.

20. (Original) A method of manufacturing a CT detector comprising the steps of:
providing a scintillator array having at least one locator extending beyond the scintillator array;
providing a comb having a plurality of teeth constructed to define a spacing between collimating elements of a collimator; and
positioning the at least one locator between at least two of the plurality of teeth.